

$$f(x) \begin{cases} x \geq 0 & yx \rightarrow f^{-1}(x) \end{cases} \begin{cases} x \geq 0 & \frac{x}{y} \\ x < 0 & \frac{x}{y} \end{cases}$$

$$f^{-1}(x) = ax + b | x | = \frac{y}{\lambda} x - \frac{1}{\lambda} | x |$$

$$a = \frac{\frac{1}{\lambda} + \frac{1}{\lambda}}{y} = \frac{y}{\lambda}$$

$$b = -\frac{1}{\lambda} \quad ab = \frac{y}{\lambda} \left(-\frac{1}{\lambda}\right) = -\frac{y}{\lambda^2}$$

5

$$f(y) = \frac{y+k}{y+m} = \frac{1}{0} = -1 \rightarrow m = -y$$

$$f(x) = \frac{y x + k}{x - y} \rightarrow f^{-1}(x) = \frac{y x + k}{x - y}$$

$$f \circ f^{-1}(x) = x, x \in D_{f^{-1}} \rightarrow D_{f^{-1}} = \mathbb{R} - \{y\}$$

$$y = f \circ f^{-1}(x) + f^{-1}(x) = x + \frac{y x + k}{x - y} = x \rightarrow \frac{y x + k}{x - y} = 0 \rightarrow x = -\frac{k}{y}$$

7

$$y - g\left(\frac{x}{y}\right) = t \rightarrow g\left(\frac{x}{y}\right) = y - t \rightarrow \frac{x}{y} = g^{-1}(y - t) \rightarrow x = y g^{-1}(y - t)$$

$$f(y - yx) = t \rightarrow y - yx = f^{-1}(t) \rightarrow x = \frac{y - f^{-1}(t)}{y}$$

$$\begin{cases} x = y g^{-1}(t) \\ x = \frac{y - f^{-1}(t)}{y} \end{cases} \rightarrow \frac{y - f^{-1}(t)}{y} = y g^{-1}(t) \rightarrow y = y g^{-1}(t) + f^{-1}(t)$$

1

$$y = \frac{\omega x - 1^y}{1 - x} \rightarrow -y = \frac{\omega x - 1^y}{x - 1} \rightarrow -y = \frac{\omega(x - y) - 1^y}{(x - y) - 1} = \frac{\omega x - y^y}{x - y} \rightarrow -y + \omega = \frac{1 \cdot x - y^y}{x - y}$$

$$f(x) = \frac{1 \cdot x - y^y}{x - y} \rightarrow f^{-1}(x) = \frac{y x - y^y}{x - 1}$$

$$\frac{1 \cdot x - y^y}{x - y} = \frac{y x - y^y}{x - 1} \rightarrow (1 \cdot x - y^y)(x - 1) = (y x - y^y)(x - y)$$

$$x^y - 1^y x + y^y = 0 \rightarrow x^y - 1^y x + y^y = 0 \rightarrow x = -\frac{b}{a} = 1^y$$

9

$$y = x + y[x] \rightarrow [y] = [x + y[x]] \rightarrow [y] = \omega[x] \rightarrow [x] = \frac{[y]}{\omega}$$

$$y = x + \frac{y}{\omega}[y] \rightarrow x = y - \frac{y}{\omega}[y] \rightarrow y = x - \frac{y}{\omega}[x] = g(x)$$

$$(f - g)(x) = f(x) - g(x) = x + y[x] - x + \frac{y}{\omega}[x] = \frac{y}{\omega}[x]$$

1.